Fishery Management Report No. 05-26

The Southeast Alaska Southern Southeast Inside Sablefish Fishery Information Report With Outlook To The 2005 Fishery

by

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and

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April 2005

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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THE SOUTHEAST ALASKA SOUTHERN SOUTHEAST INSIDE SABLEFISH FISHERY INFORMATION REPORT WITH OUTLOOK TO THE 2005 FISHERY.

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April 2005

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This document should be cited as:
Holum, D. D. and E. E. Coonradt. 2005. The Southeast Alaska Southern Southeast inside sablefish fishery information report with outlook to the 2005 fishery. Alaska Department of Fish and Game, Fishery Management Report No. 05-26, Anchorage.

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ABSTRACT

The purpose of this document is to provide information on the state managed Southern Southeast Inside sablefish fishery. This report is designed to be used in conjunction with the 2004-2005 Commercial Groundfish Fishing Regulations and active News Releases and Emergency Orders, as these inseason actions will supercede information provided in this document.

Key words: Clarence Strait, Dixon Entrance, Southern Southeast Inside Subdistrict, SSEI, Area 150, A-B Line, Sablefish, Fishery, Management, History, Outlook, Regulations, Quotas, CPUE.

INTRODUCTION

Sablefish (*Anoplopoma fimbria*) are a commercially important species throughout their range, and are typically harvested using longline or pot gear. The Alaska Department of Fish and Game (ADFG) Southeast Region manages two sablefish fisheries, one in the Southern Southeast Inside (SSEI) Subdistrict, also known as the Clarence Strait sablefish fishery and one in the Northern Southeast Inside (NSEI) Subdistrict, the Chatham Strait sablefish fishery (Figure 1). Sablefish harvest is not allowed in the state managed outside coastal waters (0–3 miles). This report details the commercial longline and pot fishery and the management of sablefish in the SSEI Subdistrict (Figure 2).

SABLEFISH LIFE HISTORY

Sablefish are members of the Anoplopomatidae family that includes sablefish and skillfish. They occur only in the North Pacific Ocean, the Bering Sea, and adjacent waters from Hokkaido, Japan to Baja California, with the greatest abundance in the Gulf of Alaska (Wolotira et al. 1993). Adult sablefish inhabit the deeper water areas of the continental shelf, the slope, and the deepwater coastal fjords. Most adults live in depths of 366 m to 914 m (200 to 500 fm) although they have been found in depths of less than 183 m (100 fm) to over 1,829 m (1,000 fm) (Allen and Smith 1988).

Sablefish are divided into two populations. The northern population extends from northern British Columbia up through the Gulf of Alaska and westward to Japan. The southern population extends from southern British Columbia to the Baja peninsula. The population subdivision was based on differences in size at maturity, growth, and movement (McDevitt 1990).

Sablefish are a long-lived species with fish over age 40 commonly found in commercial samples. The estimated maximum reported age in Alaska is 94 years (Kimura et al. 1998), in Canada is 55 years (McFarlane and Beamish 1983) and in SSEI (from ADF&G survey data, 1998–2002) is 64 years.

Sablefish spawn in pelagic waters near the edge of the continental slope (300–500 m depth) in the spring of the year (McFarlane and Nagata 1988). Eggs develop at depth and larvae develop near surface waters. Sablefish juveniles exhibit rapid growth, and reside in continental shelf waters, often in bays and nearshore waters, moving to the continental shelf beginning around age 2 (Sigler et al. 2001).

In the Gulf of Alaska, adult sablefish reach an average length and weight of 69 cm and 3.4 kg for males and 83 cm and 6.2 kg for females (Sigler et al. 2001). Fifty percent of females are sexually mature at 69 cm (or 6.5 years) and fifty percent of males are mature at 57 cm (or 5 years) (Sigler et al. 2001). Maximum length of sablefish in Clarence Strait is 103 cm (88 cm for males and 103 cm for females) (from ADF&G fishery data, 1998–2004). Sablefish caught in SSEI reach an average length and weight of 60 cm and 2.2 kg for males and 63 cm and 2.7 kg for females (ADF&G fishery data, 1998–2004).

Adult sablefish are opportunistic feeders, preying on fish (including pollock, eulachon, capelin, herring, sandlance, and Pacific cod) squid, euphasids and jellyfish (Yang and Nelson 2000). Yearling sablefish primarily feed on euphasids (Sigler et al. 2001). Juvenile sablefish are eaten by adult coho and Chinook salmon and were the fourth most commonly reported prey species in the Alaska Trollers Association logbook program from 1977 through 1984 (Wing 1985). The only other species documented to prey on adult and juvenile sablefish is Pacific halibut (Yang and Nelson 2000).

Natural mortality for sablefish in the Gulf of Alaska is estimated to range from 0.10 (Sigler et al. 2001, Funk and Bracken 1984, Johnson and Quinn 1988) to 0.22 (Low et al. 1976).

Tagging studies were conducted by ADF&G in the SSEI Subdistrict from 1979 to 1989.This tag data suggests sablefish frequently move in and out of the Clarence Strait and Dixon Entrance area. The tagging data shows the movement to be dependent on length of the sablefish at the time of tagging, with smaller fish (< 51 cm) moving north, larger fish (>55 cm) moving south and an equal proportion of 51–55 cm fish moving north and south (Bracken 1983b).

SOUTHEAST SABLEFISH FISHERY

HISTORY OF THE FISHERY

Sablefish, also known as blackcod, have been harvested from the internal waters of Southeast Alaska since the early 1900s. Prior to 1913, most sablefish were landed as incidental catch in the halibut fisheries of the era (Bracken 1983a). Early sablefish landings from inside waters were primarily from Chatham Strait and Fredrick Sound with Clarence Strait producing only a minor amount. Landings did not exceed 200 mt until 1916, when the Bureau of Fisheries introduced the market name "sablefish" and fostered a campaign of increased utilization of the species (Kolloen 1944). In 1917 and 1918 catches rose to exceed 700 mt, as World War I drove demand and prices for all food products sharply upward. With the return of peace, sablefish landings dropped below 400 mt and prices fell dramatically. Both continued to decline through the early 1930's.

After 1934 ex-vessel prices and landings began to increase and rapidly accelerated during World War II. Sablefish that had brought from 1.5 to 3 cents a pound in the 1930–1940 period rose to 4.6 cents in 1941, 7.3 cents in 1942, and 10 cents a pound in 1943. In addition to the increased demand for flesh, sablefish livers also rose in value to $1.65 a pound in 1944 while viscera were bringing up to 35 cents a pound (Kolloen 1944). The increased demand for fish and fish liver oil during the war years resulted in significant fluctuations from previous harvest levels. Until the 1970's, effort and harvest levels continued to vary widely due to price variations and opportunities afforded by other fisheries (Bracken 1983a).

It is difficult to determine when the Clarence Strait/Dixon Entrance (SSEI Subdistrict) sablefish fishery began (Table 1). Records show the first recorded landings of sablefish from the "Ketchikan area" were in 1917 and the first catches recorded from the area identified as Dixon Entrance were in 1933 (Barry Bracken, Groundfish Project, ADF&G Commercial Fisheries Management and Development Division, Petersburg, memorandum to Carl Rosier, Commissioner, ADF&G, Juneau, June 17, 1994). However, that portion of Dixon Entrance now included in the SSEI management district is a recent addition. While it is likely the majority of early harvests of sablefish occurred in waters now contained in the SSEI Subdistrict, this cannot be determined with certainty.

By 1935 the Clarence Strait/Dixon Entrance fishery was a regular feature of annual reports and regulations governing the fishery were passed in 1945; however, the southern Southeast inside sablefish fishery remained small in comparison to that of the northern inside area (Chatham Strait) until the 1970's. In 1970 the type of fishing gear allowed in the southern inside waters and Dixon Entrance was expanded from longline gear to include pots. By 1973 a significant fishery had been established. Indeed, from 1973 to 1975, the southern inside areas and Dixon Entrance accounted for 33% of the total U.S. sablefish harvest. By 1979 pot gear was responsible for less than 5% of the total harvest (Bracken 1983a).

As noted before, the SSEI boundaries have undergone changes over time. The original SSEI Subdistrict included the waters of Clarence Strait, Sumner Strait, Behm Canal, Ernest Sound, the outer coast of Prince of Wales Island and a small portion of southern Frederick Sound. Dixon Entrance, from 1945 through 1976, was managed separately as part of a larger outside district, Area 150 (Figure 3). Area 150 was subject to a set annual season. Dixon Entrance was opened to year-round fishing by the State of Alaska in 1977 to encourage increased U.S. groundfish fishing activity after the passage of the Magnuson Fisheries Conservation and Management Act in 1976. The Dixon Entrance District was first closed by the state in-season on August 2, 1982, in joint cooperation with a federal closure of outside southeastern waters, to prevent over-harvest of the sablefish quota (Barry Bracken, Groundfish Project, ADF&G Commercial Fisheries Management and Development Division, Petersburg, memorandum to Carl Rosier, Commissioner, ADF&G, Juneau, June 17,1994). The SSEI inside area was closed that same year by state emergency order (E.O.) on September 30.

In 1983 the Dixon Entrance District was formally recognized by the State of Alaska as part of the SSEI Subdistrict for groundfish management. One of the primary reasons for identifying this district in regulation involved the fact that some vessels were harvesting groundfish without regard to existing state or federal regulations. This was possible because the district was not included in the federal groundfish fisheries management plan and state regulations did not formally identify the area as state managed waters (Barry Bracken, Groundfish Project, ADF&G Commercial Fisheries Management and Development Division, Petersburg, memorandum to Carl Rosier, Commissioner, ADF&G, Juneau, June 17,1994). Relying on a federal regulation that allowed adjacent states to manage groundfish harvests by U.S. vessels in areas not covered by federal agencies, and by invoking a law that prohibited landings from the area by vessels not licensed in the state, Alaska effectively established management jurisdiction over the Dixon Entrance District (Barry Bracken, Petersburg, email to Deidra Holum, Groundfish Project, ADF&G, Douglas, March 28, 2005). This newly adopted district included waters east of the longitude of Cape Muzon (132º 40' W. longitude) but it no longer contained the portion of the waters to the west, out to 140º W. longitude, as it originally did when it was referred to as Area 150.

By extending the SSEI Subdistrict to include Dixon Entrance, the state of Alaska was entering disputed waters. In 1825, Great Britain and the Russian Empire signed a treaty that established a territorial boundary between Russian America and British held lands to the south. In 1867 when the United States (U.S.) purchased Alaska, the nation inherited this treaty, as did Canada when British Columbia joined the Confederation in 1871 (Fogarassy 1991).

In 1903, the Alaska Boundary Tribunal, consisting of 3 Americans, 2 Canadians and 1 British subject, met to resolve both the location and nature of the boundary in Dixon Entrance. Both parties agreed that Cape Muzon was the southern boundary of Alaska and this was designated as

Point A. Point B, which concerned the easternmost point of the boundary line that has become known as the A-B Line, was a matter of more contention (Figure 4). Eventually Point B was decided in favor of the U.S. when the British representative adopted that delegation's position (Fogarassy 1991). The nature of the boundary, however, was not determined by the tribunal and remains a matter of dispute to this day. Canada maintains that the A-B Line is the international boundary and that all waters lying to the south are Canadian territorial waters. The U.S. maintains the 1825 treaty and the 1903 tribunal only established a territorial allocation that applies to lands lying north and south of the A-B Line and that the maritime border runs equidistance from these lands.

In 1977, the U.S. and Canada simultaneously adopted 200-mile Exclusive Economic Zones. This further complicates the issue of the A-B Line vs. a mid channel border in that the trend of whichever line is eventually accepted by both parties will extend 200 miles seaward and dramatically affect access to fisheries and other natural resources in the area.

The current policy of flag state enforcement for the disputed waters between the A-B Line and the Equidistant Line was best summarized in 1988 by Captain G.W. Risinger, commander U.S. Coast Guard Group, Ketchikan, Alaska:

> "To prevent interference to each country's fishing fleets, an agreement has been reached concerning enforcement in the disputed area. The agreement states only Canada may enforce fisheries laws against Canadian vessels while only the United States may enforce against U.S. vessels. …Each nation has also agreed not to introduce any new fisheries or allow an expansion of existing fisheries in the disputed area".

Even so there have been periods of intensified tensions when vessels fishing in waters claimed by their national governments have been harassed or arrested and escorted to foreign ports by enforcement agents of the contending claimants. The most recent occurrences involve the July 5, 1989 incident where the Canadian salmon fishing vessels *Viscount* and *Fonzie* were boarded by the U.S. Coast Guard and escorted to Ketchikan, and the July 1, 1999 incident when the Alaskan sablefish fishing vessel *Lesley Ann* was boarded and escorted to Prince Rupert, British Columbia by the Canadian Coast Guard. While such incidents are infrequent, the disputed border remains a potential problem for both fishermen and enforcement. Moreover, it opens the possibility of Canadian harvests impacting stocks managed for Alaska permit holders by the Alaska Department of Fish and Game.

REGULATION DEVELOPMENT

The first regulation regarding season length was imposed sometime around 1945 due to a noticeable decline in catch per unit effort and the average weight of sablefish landed. Until then, the sablefish season in all areas had been open year round. The justification for shortening the season by 2.5 months, with a closure imposed for all areas from December 1 until March 15 of the following year, was to provide protection of the stocks during the winter spawning period and to reduce impacts on halibut stocks incidentally taken during the early spring sablefish fishery.

The closed period was extended from December 1 to May 1 in 1947. Although that action called for a four-month closure, in reality it involved a longer closure. Since the May 1 sablefish opening was concurrent with halibut openings at that time, and the same fleet was involved in both fisheries, the directed sablefish fishery did not start until after the Area II halibut closure.

This restricted the sablefish fishery to the summer and fall seasons (Bracken 1983a). The December 1 to May 1 closure remained in effect for the southern Southeastern districts through 1972 when the season was changed back to April 1 through December 30. In 1976 the season in the southern Southeastern districts was shortened to June 15 to November 15 and then changed to June 1 through November 15 in 1989.

In 1992 a concerted effort was made by SSEI sablefish permit holders to change the traditional June opening of the fishery to September to take advantage of possible larger fish in SSEI at that time of year. The possibility of obtaining a better price in a fall fishery was also given as a reason. The existing regulation stipulated that sablefish could be taken in the Southern Southeast Inside Subdistrict from June 1 through November 15 with the department charged with the responsibility of establishing fishing seasons within the following guidelines: coincide with favorable tides; avoid conflicts between fishing periods and halibut openings in Area 2-C; schedule all opening and closing times at 12:00 noon.

There were 32 SSEI permit holders at the time. Forms were sent out to all permit holders asking whether they preferred a June 23 or October 18 opening date for the fishery. In order to be considered, forms had to be signed and returned by April 1, 1992. A total of 22 forms were returned but one arrived after the deadline and was therefore not included in the vote. Eleven permit holders voted in favor of keeping the traditional June opening date for the SSEI fishery. Nine permit holders voted to change the opening date to October. One permit holder was neutral. Based on the outcome of this vote the decision was made to retain the June opening date for the SSEI sablefish fishery.

In 1980, a guideline harvest range (GHR) was established for the SSEI sablefish fishery. Additional regulations were imposed on the fishery, primarily in the form of seasonal limitations, as effort escalated in the 1980s. Season limitations were placed on the SSEI fishery in 1984, decreasing the number of fishery days to 48 from 112 days in 1983 (Table 2). Fleet effort and efficiency continued to increase, and by 1985, fishing time was reduced to 7 days and a limited entry program was implemented. In 1991, the number of days fished in SSEI was further reduced to 2.4 days and finally to 2 days in 1995 where it remained until 1997 (Tables 3 and 4).

In 1997, several management actions were implemented including the equal quota share (EQS) system, management based on round fish, and separate seasons for longline and pot gear fishermen, summer and fall respectively. The EQS system gives each eligible permit holder an equal portion of the annual harvest objective (AHO). The amount of the EQS varies annually based on the number of legal participants and the sablefish quota for SSEI.

Pot fishermen and longliners experienced difficulties when fishing gear was operated in the same area at the same time. Longliners could turn over gear at a faster rate, (an effective pot set requires a 24 to 36 hour soak vs. less than a 12 hour soak for longliners); there were also entanglement issues between the two gear types. No pot gear was fished for several years due to this problem that effectively denied these permit holders access to the fishery. Pot gear permit holders petitioned the Commercial Fisheries Entry Commission (CFEC) for a solution to this problem. By creating a split season the entanglement issue between the two gear types was resolved. This allowed both longline and pot fishermen to more effectively utilize their gear. The season length was changed with the pot gear season set at 2.5 months while the longline season was extended from 2.4 days to 1.5 months (Table 2). The Alaska Board of Fisheries (BOF) also

passed a regulation requiring all vessels participating in state managed groundfish fisheries to maintain logbooks with required information (Appendix B).

In 1998 the AHO for the SSEI longline and pot fisheries combined was 632,000 round pounds. In 1999 the AHO for both fisheries was increased by 9% to 696,000 round pounds. In 2000 the BOF extended the SSEI longline season from 45 days to 76 days. This made the length of the SSEI longline sablefish fishery the same as both the SSEI pot sablefish fishery and the NSEI longline sablefish fishery. Another regulation introduced in 2000 required full retention and reporting of all *Sebastes* rockfish caught in the NSEI and SSEI Subdistricts (Table 2).

Several new regulations were adopted by the BOF during their 2003 meeting in Sitka. These new regulations included allowing for a 5% sablefish overage/underage that could be carried over to the following season. Legal overages could also be transferred from one permit holder to another. Another regulation permitted sablefish to be taken outside of established fishing seasons in order to provide information on stock conditions or other research questions under the terms of a Commissioner's Permit. The Guideline Harvest Range (GHR) was repealed, the criteria for setting the AHO was revised and the logbook requirements were strengthened.

The SSEI fishery may also be regulated using in season management tools called Emergency Orders (EO). These orders allow ADF&G to supercede or add to published regulations, to prevent overharvest of a target or bycatch species (Table 5).

PARTICIPATION

In 1985, CFEC imposed a license limitation in the SSEI sablefish fishery. After limited entry was implemented, the longline and pot fisheries included 43 participants (Table 6). Successive years showed some fluctuation in the number of permit holders actually fishing SSEI (23–34 permits). In 1997, there were 30 longline permits and 5 pot permits authorized to fish SSEI. In 1998, one pot and one longline interim use permit were eliminated. Three longline interim use permits were also eliminated in 1999 and another one in 2000. This brought the total number of participants eligible to fish SSEI sablefish to 25 longline permits and 4 pot permits. These permit numbers remained the same for the 2001 and 2002 fisheries. In 2003 one longline permit was eliminated bringing the total number of permits to 24 longline and 4 pot. The number of permits remained the same for the 2004 season. The goal of CFEC in the SSEI fishery is 12 longline permits and 3 pot permits. To date 4 longline permits and 1 pot permit have been granted as permanent by CFEC. The remaining permits are in the review or appeal process.

QUOTAS AND CATCH

In 1980 the SSEI sablefish guideline harvest limit (GHL) was set (based on historical catches) at 790,000 round pounds, where it remained until 1998. In 1998 the SSEI longline sablefish survey showed an 18% decrease in catch per unit effort (CPUE), compared to 1997. As a result, the AHO for the longline and pot fishery combined was reduced to 632,000 round pounds for 1998. In 1999 an increase in the survey CPUE resulted in an AHO of 696,000 round pounds where it has remained through the 2004 season.

In the years between 1986 and 1997 the AHO was exceeded on 4 occasions: 1989, 1992, 1993 and 1994 despite attempts to prevent overharvest through season restrictions (Figure 5). The AHO has not been exceeded since the inception of the EQS system in 1997.

In 2003 and 2004 the SSEI sablefish longline fishery closed by regulation on August 15, and in both years 23 of the 24 permit holders eligible to fish in this commercial longline fishery

participated. For those same years, the SSEI sablefish pot fishery closed by regulation on November 15 and all 4 eligible pot-gear permit holders fished. The total sablefish landings from the SSEI sablefish fishery, both longline and pot, totaled 657,330 round pounds in 2003 and 648,845 round pounds in 2004. The estimated ex-vessel value of the 2003 and 2004 fisheries was $1,468,262 and $1,030,675 respectively (Table 6). Of that amount, the State of Alaska received $2,707.30 in 2003 and $0.00 in 2004 in overage payments. The monies received in 2003 were in part due to departmental interpretation of the 5% overage regulation that became effective July 18, 2003. While this regulation was passed with the intent of becoming applicable for the 2003 season, the SSEI longline season commenced in June. The three vessels that made overage deliveries in June 2003 were contacted with offers of refunds. All three chose to allow the overage payments to remain with the state rather than accepting reductions to their 2004 sablefish quotas. The State of Alaska received no overage monies in 2004 due to the 5% overage regulation.

Over time the value of sablefish has increased relative to other finfish making sablefish the most valuable finfish currently sold in Southeast Alaska.

METHODS FOR DATA COLLECTION

Port samplers, located in Ketchikan and Petersburg, collect biological data specific to the SSEI commercial longline sablefish fishery. Port sampling in the SSEI longline fishery began in 2001. The SSEI pot fishery is not port sampled because of timing and staff availability. Data gathered includes, length, weight, sex, maturity and otoliths. Biological sampling of the SSEI fishery began on a regular basis in 2001; prior to that time samples were collected primarily during the SSEI longline survey.

Logbooks are mandatory for this fishery. Information collected includes date gear set, date gear hauled, location (in latitude and longitude) of each set, description and amount of gear set, estimation of target catch and bycatch by species for each set. The State requires a copy of this logbook be turned in with the fish ticket documenting the landing.

BIOLOGICAL DATA

Length frequency distributions for the fishery data show a mean length of 61 cm for both 2002 and 2003 and 62 cm for 2004 (Figure 6). Mean length in the fishery is slightly larger than in the survey, in which average length for 2002 to 2004 was 57cm, 58cm, and 59cm respectively. One logical explanation for this difference is high grading for larger fish in the commercial fishery. Length distributions from the commercial fishery for the year in 2003 show a strong mode at 62 cm; in 2004 strong modes appear at 61 and 65 cm. The length distribution in the commercial fishery shows similar trends as the survey data. It is difficult to track distinct cohorts in the SSEI Subdistrict because of sablefish movement through the area.

A length-weight regression, modeling the parameters $W = aL^b$ is shown in Figure 7. This relationship, for sablefish sampled from the SSEI longline fishery (2001 through 2003), was calculated at:

$$W=.00000554L^{3.147482} \text{ for males}$$

and

$$W=.00000578L^{3.13711073} \text{ for females}$$

Data for all years was combined, however both males and females were plotted separately (Figure 7). The relationship in length to weight shows a difference in growth between male and female sablefish with female sablefish having a slightly steeper growth curve than males.

Sex ratio in the fishery data for the years 2001 to 2004 is 46% male and 54% female which; survey data from these same years shows a sex ratio of 52% male and 48% female.

Otoliths are collected by port samplers during the SSEI longline fishery and aged by ADF&G lab personnel in Juneau using the break-and-burn techniques (Williams and Bedford 1974). Due to the lack of consistent port sampling prior to 2002 and the backlog of otoliths to be processed, ages, of a quantity significant enough to use for age frequency graphs, are only available for the year 2002. Therefore age frequency graphs, used to track strong age cohorts through time, are not yet available for this fishery.

CATCH PER UNIT EFFORT

Fishery catch per unit of effort (CPUE) information was collected through skipper interview and voluntary logbook programs prior to 1997 and through a mandatory logbook program beginning in 1997. CPUE is affected by hook spacing and NMFS uses the following formula for CPUE standardization for commercial sablefish catch data (Sigler et al. 2001):

$$n_s = n_u * 2.2 * (1 - \exp(-0.57 \text{ hook spacing}))$$

Where:

n_s is the number of standardized hooks,

n_u is the number of hooks fished,

and

hook spacing is expressed in meters.

This formula standardizes the hook spacing to 42". Fishery CPUE has been adjusted for hook type (from j-hook to circle hook) and is expressed as total round pounds-per-total hooks standardized for hook spacing.

Commercial longline CPUE expressed as round pounds-per-hook remained relatively stable between 1985–1995, dropping in 1996 (Figure 8). In 1997, the first year of EQS, CPUE increased significantly from 0.171 in 1996 to 0.36 in 1997. Under the EQS management, CPUE has increased compared to the previous competitive fishery. This is not unexpected, all other things being similar, as fishermen under the EQS system can choose to fish during good tide and weather conditions (Sigler and Lundsford 2001). Since 1997 fishery CPUE has fluctuated, with 2004 falling below 2003. Longline survey CPUE also decreased slightly in 2004 but the trend since 1999 is relatively flat (Holum 2005). The 10-year average fishery CPUE was 0.35 (1995 and 2004) and the 5-year average was 0.39 (2000–2004)(Table 6).

Significant changes in fishing patterns have been observed in the commercial longline fishery in the past eight years (Figure 9). In more recent years a greater proportion of the sablefish catch is coming from Cape Chacon and lower Clarence and less from Dixon Entrance (Figure 2).

FISHERY BYCATCH

Bycatch landed in association with the 2004 SSEI sablefish longline fishery totaled 46,614 round pounds. The primary bycatch species consisted of thornyhead, rougheye rockfish and shortraker rockfish (Figure 10). The total bycatch, in round pounds, associated with the 2004 fishery was almost 24,000 lbs less than the total bycatch associated with the 2003 longline fishery. Other species landed incidental to the SSEI sablefish fishery include redbanded rockfish and Pacific cod. Skates, Dover sole, dogfish and Pacific sleeper sharks are taken as bycatch but are not typically landed.

Since 2001, rockfish bycatch associated with the SSEI sablefish fishery has steadily decreased, while price per pound has increased. The catch of shortraker rockfish has decreased 69% in this fishery from 2001, when 51,310 round pounds of shortraker was landed. Between the years 2001 to 2004, there was also a 69% decrease in rougheye rockfish and a 75% decrease in redbanded rockfish catch associated with the SSEI sablefish fishery. In part this difference can be attributed to a change in fishing patterns during the longline fishery with at least two statistical areas (315432 & 315502) being fished more heavily than in previous years (Figure 9). In addition, a new regulation introduced in the middle of the 2003 season made thornyhead, shortraker, rougheye and redbanded rockfish bycatch only species. This new regulation essentially closed the directed slope rockfish fishery on the inside waters of Southeast Alaska and prevented fishermen from profiting on these species in excess of bycatch limits. However, due to regulations requiring 100% retention of all rockfish on the inside waters fishermen are still required to land all rockfish caught.

STOCK ASSESSMENT AND MANAGEMENT

The SSEI sablefish stock assessment consists of an annual longline survey, which yields age, weight, length, gender, maturity and CPUE data. Stock assessment models are currently being investigated in an attempt to estimate sablefish biomass in the SSEI Subdistrict.

SSEI SABLEFISH LONGLINE SURVEY

Sablefish stock assessment surveys in the SSEI Subdistrict began in 1979, however they were not standardized surveys. In 1988, the Alaska Department of Fish and Game (ADF&G) began conducting a standardized annual longline research survey in the SSEI area a few weeks prior to the fishery to assess the relative abundance of sablefish over time. Surveys are conducted a few weeks prior to the season opening to maintain consistency with historic survey data. Complete information regarding the survey and results are published in a separate report (Holum 2005).

2005 SEASON OUTLOOK

Commercial fishery CPUE declined between 2003 and 2004 although the recent trend is slightly increasing (Figures 8 and 9). Longline survey CPUE also decreased slightly in 2004 but the trend since 1999 is slightly increasing (Figure 9). There are no indications of strong incoming recruitment in the length data from the 2004 survey.

The Southern Southeast Inside (SSEI) sablefish annual harvest objective will be 696,000 round pounds for 2005, unchanged from 2004. There are 24 longline and 4 pot permits eligible to fish during the 2005 season. The equal quota share will be 24,860 round pounds and the maximum underage or overage that can be carried forward to 2006 will be 1,234 round pounds.

PERMITS AND PAPERWORK NEEDED TO FISH IN SSEI SABLEFISH FISHERY

- Valid CFEC limited entry permit card specific to the SSEI Sablefish Fishery
- ADF&G Vessel license
- Vessel registration filed prior to fishing and kept onboard while fishing
- Logbook completed daily, copies kept on board the vessel for the duration of the fishery, including a record of the round weight delivered to date if multiple deliveries are made per season and pages documenting the landing attached to the fish ticket at the time of landing. Use of ADF&G Longline-Pot Fishery Logbooks is requested. ADF&G logbooks are available at ADF&G offices
- Equal Quota Share Tracking Form with Personal Quota Share balance
- Seabird Avoidance Plan, current and signed, on board the vessel while fishing

CFEC gear cards, emergency transfer requests, and ADF&G vessel registrations are available only from CFEC and not at ADF&G offices. Applications for these permits are available at ADF&G area offices or on the web at www.cfec.state.ak.us/.

A seabird avoidance plan template can be downloaded from the NMFS website at www.fakr.noaa.gov/protectedresources/seabirds/torilines/form.pdf

DELIVERING FISH OUT OF STATE

Delivering fish out of state takes prior planning, well in advance of fishing, as several agencies and permits are required. In order to take unprocessed fish out of the state, an individual or company must have an exporter license. There are two different types of exporter licenses, buyer or catcher. The buyer can buy from fishers and export unprocessed fish while the catcher can only export their own catch. The Department of Revenue requires the exporter to be bonded and prepay taxes before they can operate. All processor and exporter applications are together in the "2005 Alaska Seafood Processor and Exporter License and Permit Application: Intent to Operate". The web link for this application is:

www.cf.adfg.state.ak.us/geninfo/permits/intent/instruct.pdf

Fishers are required to complete a fish ticket and a physical copy of that fish ticket must be provided to ADF&G before the vessel leaves the state. A completed fish ticket must include:

1. weight of each species with the corresponding condition (delivery) code (i.e., round, bled, headed and gutted etc.).
2. an imprint of the valid CFEC gear card.
3. an imprint of a valid Alaskan processor code.
4. a breakdown by percentage of the groundfish statistical areas fished.
5. signatures of fisher and processor (or agent of the processor) at bottom of the fish ticket.
6. a completed logbook documenting the landing must be attached to the ticket.

If fish weights are estimated, a completed fish ticket with final weights must be returned to ADF&G within 7 days of landing. If the processor is someone other than the fisher, ADF&G must have a letter authorizing the use of the Alaskan processor code used on the fish ticket before the ticket is completed and filed with the department.

SABLEFISH REGULATIONS

5 AAC 28.105. DESCRIPTION OF EASTERN GULF OF ALASKA AREA DISTRICTS, SUBDISTRICTS, SECTIONS, AND SECTORS

(a) Southeast District: all waters described in 5 AAC 28.100.

1. **Southern Southeast Inside (SSEI) Subdistrict:** All waters of Dixon Entrance, Clarence Strait, Ernest Sound, Behm Canal, Bradfield Canal, Sumner Strait, Cordova Bay, Tlevak Strait, Bucarelli Bay, Gulf of Esquibel, Davidson Inlet, Sea Otter Sound, Stikine Strait, Blake Channel, Zimovia Strait, Eastern Passage, and contiguous bays and inlets and that portion of Frederick Sound, bordered by a line from 54° 43.50' N. lat., 130° 37.62' W. long. to 54° 43.40' N. lat., 130° 37.65' W. long. to 54° 43.25' N. lat., 130° 37.73' W. long. to 54° 43' N. lat., 130° 37.92' W. long. to 54° 42.97' N. lat., 130° 37.95' W. long. to 54° 42.78' N. lat., 130° 38.10' W. long. to 54° 42.37' N. lat., 130° 38.43' W. long. to 54° 41.15' N. lat., 130° 38.97' W. long. to 54° 39.90' N. lat., 130° 38.97' W. long. to 54° 39.23' N. lat., 130° 39.30' W. long. to 54° 39.80' N. lat., 130° 41.58' W. long. to 54° 40.05' N. lat., 130° 42.37' W. long. to 54° 40.70' N. lat., 130° 44.72' W. long. to 54° 40.68' N. lat., 130° 44.98' W. long. to 54° 40.77' N. lat., 130° 45.85' W. long. to 54° 41.10' N. lat., 130° 48.52' W. long. to 54° 41.08' N. lat., 130° 49.28' W. long. to 54° 41.35' N. lat., 130° 53.30' W. long. to 54° 41.43' N. lat., 130° 53.65' W. long. to 54° 42.45' N. lat., 130° 56.30' W. long. to 54° 42.57' N. lat., 130° 57.15' W. long. to 54° 43' N. lat., 130° 57.68' W. long. to 54° 43.77' N. lat., 130° 58.92' W. long. to 54° 44.20' N. lat., 130° 59.73' W. long. to 54° 45.65' N. lat., 131° 03.10' W. long. to 54° 46.27' N. lat., 131° 04.72' W. long. to 54° 42.18' N. lat., 131° 13' W. long. to 54° 40.87' N. lat., 131° 13.90' W. long. to 54° 39.15' N. lat., 131° 16.28' W. long. to 54° 36.87' N. lat., 131° 19.37' W. long. to 54° 29.88' N. lat., 131° 33.80' W. long. to 54° 30.53' N. lat., 131° 38.02' W. long. to 54° 28.30' N. lat., 131° 45.33' W. long. to 54° 26.68' N. lat., 131° 49.47' W. long. to 54° 21.85' N. lat., 132° 02.90' W. long. to 54° 24.87' N. lat., 132° 23.65' W. long. to 54° 24.68' N. lat., 132° 24.48' W. long. to 54° 24.68' N. lat., 132° 24.58' W. long. to 54° 24.65' N. lat., 132° 26.85' W. long. to 54° 25.33' N. lat., 132° 41.53' W. long. to the Cape Muzon Light to the northernmost tip of Eagle Point on Dall Island and passing successively through the southernmost tip of Point Arboleda, the northernmost tip of Point San Rogue, the southernmost tip of Cape Ulitka, the northernmost tip of Cape Lynch to the southernmost tip of Helm Point, and from a point west of Gish Bay at 55° 54.53' N. lat., 134° 12.50' W. long. to the Cape Decision Light and from Point Camden to Salt Point Light on Keku Strait and from Beacon Point to Wood Point;
2. **Northern Southeast Inside (NSEI) Subdistrict:** All waters of Frederick Sound, Stephens Passage, Lynn Canal, Icy Strait, Glacier Bay, Chatham Strait, and contiguous bays and inlets bordered by a line from Beacon Point to Wood Point, from Point Camden to Salt Point Light, the Cape Decision Light to a point west of Gish Bay at 55° 54.53' N. lat., 134° 12.50' W. long. to the southernmost tip of Helm Point to the westernmost tip of Hazy Island to the Cape Ommaney Light, north of 57° 30' N. lat. in Peril Straight, from the westernmost tip of Column Point to the northernmost tip of Soapstone Point and from the southernmost tip of Cape Spencer through Yakobi Rock to Yakobi Island;
3. **Icy Bay Subdistrict:** All waters of the Southeast District between 140° W. long., including Yakutat Bay three miles seaward of a line from Ocean Cape at 59° 30' N. lat.;
4. **Southeast Outside Subdistrict:** All remaining waters of the Southeast District:
   (A) Southern Southeast Outside (SSEO) Section: all waters of the Southeast Outside Subdistrict south of 56° N. lat., and east of 137° W. long.;
   (B) Central Southeast Outside (CSEO) Section: all waters of the Southeast Outside Subdistrict between 56° N. lat. and 57° 30' N. lat., and east of 137° W. long.;
   (C) Northern Southeast Outside (NSEO) Section: all waters of the Southeast Outside Subdistrict north of 57° 30' N. lat., and east of 137° W. long.;
   (D) East Yakutat (EYKT) Section: all waters of the Southeast Outside Subdistrict between 137° and 140° W. long.

5 AAC 28.110. SABLEFISH FISHING SEASONS FOR EASTERN GULF OF ALASKA AREA.

(a) In the Eastern Gulf of Alaska Area, sablefish may be taken only as follows:

(1) in the Northern Southeast Inside Subdistrict, from 8:00 a.m. August 15 until 12:00 noon November 15;

(2) in the Southern Southeast Inside Subdistrict, from 8:00 a.m. June 1 until 12:00 noon August 15 with longline gear, and from 8:00 a.m. September 1 until 12:00 noon November 15 with pot gear.

(b) Repealed 6/15/97.

(c) Notwithstanding (a) of this section, sablefish may be taken outside of established seasons in order to provide information on stock condition and other research questions, as provided in this subsection. The commissioner shall request that permit holders who are interested in fishing outside of established seasons for that purpose notify the department. The commissioner will randomly select from those permit holders, and selected permit holders shall fish under terms specified by the commissioner.

5 AAC 28.160 HARVEST GUIDELINES AND RANGES FOR EASTERN GULF OF ALASKA AREA.

(a) In the Northern Southeast Inside Subdistrict, the department will set the annual guideline harvest limit for the taking of sablefish based on information available to the department, including estimates of sablefish biomass.

(b) In the Southern Southeast Inside Subdistrict, the department will set the annual guideline harvest limit for the taking of sablefish based on information available to the department, including estimates of sablefish biomass.

5 AAC 28.170. SABLEFISH POSSESSION AND LANDING REQUIREMENTS FOR EASTERN GULF OF ALASKA AREA.

(a) The operator of a vessel taking sablefish in the Northern or Southern Southeast Inside Subdistrict shall, before taking sablefish in another area, unload all sablefish taken in either Subdistrict and submit a completed fish ticket to the department.

(b) The operator of a fishing vessel may not take sablefish in the Northern or Southern Inside Subdistricts with sablefish taken in another area on board.

(c) In the Northern and Southern Southeast Inside Subdistricts, and in the waters of Alaska within the Southeast Outside Subdistricts, a sablefish bearing a fisheries agency tag at the time of capture may be retained and sold at any time, if the fish is landed with the tag intact and the recovery is reported to the department at the time of landing. The tagged fish must be presented to a local representative of the department upon request.

Repealed 6/15/95

Repealed 11/16/96

(f) Except as provided in (j) of this section, in the Northern Southeast Inside Subdistrict, the holder of a CFEC permit or interim use permit for sablefish may not retain more sablefish in the directed fishery than the annual amount of sablefish equal quota share that is specified by the department. A permit holder must retain all visibly injured or dead sablefish. Sablefish that are not visibly injured or dead may be released unharmed, but the permit holder must record the live releases in a logbook by gear settings. The department shall determine the annual amount of sablefish equal quota share by dividing the annual harvest objective by the number of CFEC permits and interim use permits eligible to be fished in the fishery. The department shall use the best available information, including harvest rate and biological data, to set the annual harvest objective.

(g) Except as provided in (j) of this section, in the Southern Southeast Inside Subdistrict, the holder of a CFEC permit or interim use permit for sablefish may not retain more sablefish in the directed fishery than the annual amount of sablefish equal quota share specified by the department. The department shall determine the annual amount of sablefish equal quota share by dividing the annual harvest objective by the number of CFEC permits and interim use permits eligible to be fished in the fishery. The department shall use the best available information, including harvest rate and biological data, to set the annual harvest objective.

(h) In the portion of the Southeast Outside Subdistrict that is under 5 AAC 39.975(13), retention of sablefish is prohibited

(i) When participating in the sablefish fishery in the Northern Southeast Inside Subdistrict or Southern Southeast Inside Subdistrict, a person holding a CFEC permit or interim use permit for that fishery must retain in the person's possession and present for inspection on board the vessel on which that person is registered to fish, a copy of each completed fish ticket issued to the person during the current season. The permit holder shall provide each buyer with the total round weight of sablefish that the permit holder has landed to date in the fishery for that year.

(j) If a permit holder's harvest exceeds the permit holder's equal quota share established under (f) or (g) of this section for that year, by not more than five percent, the department shall reduce the permit holder's equal quota share for the following year by the amount of the overage or the permit holder may transfer inseason the overage to another permit holder who has not harvested that permit holder's full equal quota share. If the overage is transferred under this subsection, both permit holder's shall record the transfer in the holder's logbook and in fish tickets. If a permit holder's harvest exceeds the permit holder's equal quota share by more than five percent, the proceeds from the sale of the overage in excess of five percent shall be surrendered to the state and the permit holder may be prosecuted under AS 16.05.723. The provisions of this subsection do not apply after May 30, 2006.

(k) If a permit holder's harvest is less than the permit holder's equal quota share established under (f) and (g) of this section for that year, the department shall increase the permit holder's equal quota share only for the following year by the amount of the underage that does not exceed five percent of the equal quota share. The provisions of this subsection do not apply after May 30, 2006.

5 AAC 28.130 LAWFUL GEAR FOR EASTERN GULF OF ALASKA AREA.

(a) In the Northern Southeast Inside Subdistrict, the Southeast Outside Subdistrict, and the East Yakutat District, sablefish may be taken only with longlines. In the Southern Southeast Inside Subdistrict, sablefish may be taken only with longlines and pots.

(f) In the Eastern Gulf of Alaska Area, pots may not be longlined, except that pots may be longlined in the Southern Southeast Inside Subdistrict sablefish fishery. At least one buoy on each groundfish pot must be legibly marked with only the permanent department vessel license plate number of the vessel operating the gear. The number must be placed on the top one-third of the buoy in numerals at least four inches high and one-half inch wide, must be in a color contrasting to the color of the buoy, and must be visible above the water surface when the buoy is attached to the groundfish pot. If groundfish pots are longlined, under this subsection, a buoy is not required for each pot, but at least one buoy must be attached to the longline, and the buoy must be marked as described in this subsection.

(i) repealed 7/18/03

5 AAC 39.145 ESCAPE MECHANISM FOR SHELLFISH AND BOTTOMFISH POTS. Pot gear must include an escape mechanism in accordance with the following provisions:

(1) A sidewall, which may include the tunnel, of all shellfish and bottomfish pots must contain an opening equal to or exceeding 18 inches in length, except that in shrimp pots the opening must be a minimum of six inches in length. The opening must be laced, sewn, or secured together by a

single length of untreated, 100 percent cotton twine, no larger than 30 thread. The cotton twine may be knotted at each end only. The opening must be within six inches of the bottom of the pot and must be parallel with it. The cotton twine may not be tied or looped around the web bars. Dungeness crab pots may have the pot lid tie-down straps secured to the pot at one end by a single loop of untreated, 100 percent cotton twine no larger than 60 thread, as a substitute for the above requirement; the pot lid must be secured so that, when the twine degrades, the lid will no longer be securely closed.

(2) All miscellaneous shellfish and bottomfish pots may, instead of complying with (1) of this section, satisfy the following: a sidewall, which may include the tunnel, must contain an opening at least 18 inches in length, except that shrimp pots must contain an opening at least six inches in length. The opening must be laced, sewn, or secured together by a single length of treated or untreated twine, no larger 36 thread. A galvanic timed released (GTR) device, designed to release in no more than 30 days in salt water, must be integral to the length of twine so that, when the device releases, the twine will no longer secure or obstruct the opening of the pot. The twine may be knotted only at each end and at the attachment points on the galvanic timed-release device. The opening must be within six inches of the bottom of the pot and must be parallel with it. The twine may not be tied or looped around the web bars.

5 AAC 28.180. PROHIBITIONS FOR EASTERN GULF OF ALASKA AREA.

(a) A vessel or a person on board a vessel from which commercial, subsistence, or personal use longline fishing gear was used to take fish in the Northern or Southern Southeast Inside Subdistrict during the 72-hour period immediately before, or from which that gear will be used during the 24-hour period immediately after an open sablefish fishing period, may not participate in the taking of sablefish in either subdistrict during that open sablefish fishing period.

(b) Unless authorized by the terms of a scientific, propagative, or educational permit issued under AS 16.05.340(b), a person may not possess groundfish in a manner that indicates an intent to keep the groundfish alive.

5 AAC 28.106. EASTERN GULF OF ALASKA AREA REGISTRATION.

(b) Notwithstanding 5 AAC 28.020(a), before a person uses a vessel to operate gear to take sablefish in the Northern Southeast Inside (NSEI) Subdistrict or the Southern Southeast Inside (SSEI) Subdistrict, the vessel owner, or the owner's agent, shall register the vessel with the department as follows:

(1) the vessel must be registered before fishing in the sablefish fishery;

(2) the vessel owner, or the owner's agent, shall include on the registration form the vessel's name and the full name and CFEC permit number or interim use permit number of each sablefish permit holder who will be on board the vessel during the open fishing period;

(3) the vessel owner, or the owner's agent, shall sign the registration form;

(4) a person who holds a CFEC sablefish permit or interim use sablefish permit for the NSEI Subdistrict or for the SSEI Subdistrict may not register to fish on more than one vessel at a time;

(5) a separate registration is required for each Subdistrict.

5 AAC 28.175. LOGBOOKS FOR EASTERN GULF OF ALASKA AREA.

(a) An operator of a vessel fishing for groundfish in the waters of Alaska in the Eastern Gulf of Alaska Area or in a state-managed directed fishery in the waters of the exclusive economic zone adjacent to the Eastern Gulf of Alaska Area shall maintain an accurate logbook of all fishing operations for each type of gear used.

(b) A logbook described in (a) of this section

(1) for longline gear must include, by set, the date, the specific location of harvest by latitude and longitude for start and ending positions, hook spacing, the amount of gear (number of hooks) used, the depth of each set, the estimated weight of all target species taken, an estimated weight of the bycatch retained or discarded at sea, and the tag number of any tagged fish landed; for the Northern Southeast Inside Subdistrict and the Southern Southeast Inside Subdistrict sablefish fisheries, a logbook must include a record of the round weight delivered, the purchasing processor, and date of each delivery during that season if multiple landings have been made;

(2) for dinglebar, mechanical jig, or hand troll gear must include the date, the specific location of harvest by six digit statistical area and nearest headland, the number of lines and hooks per lines used, the average depth fished, the hours fished for each line, and the number of bycatch fish taken, by species; for the target species the following is required:

(A) the number retained;

(B) the number discarded; and

(C) for lingcod only, their estimated sex ratio;

(3) must be updated, within 24 hours after midnight local time on the day of operation; and

(4) must be retained, with its original pages, for a period of two years by the owner or operator of the vessel.

(5) must include the tag number of any tagged fish landed, with the date and specific location.

(c) A logbook described in (a) of this section must be kept on board the vessel while operating gear, during transits to or from a port of landing, and for five days after delivering groundfish.

(d) Repealed 6/15/97

(e) A logbook described in (a) of this section must be made available to a local representative of the department upon request.

(f) A copy of the page of the logbook described in (a) in this section pertaining to a landing must be attached to the fish ticket documenting the landing.

(g) A person may not make a false entry in the logbook described in (a) of this section.

5 AAC 28.173. LINGCOD POSSESSION AND LANDING REQUIREMENTS FOR EASTERN GULF OF ALASKA AREA.

(a) In the Southeast District, a vessel fishing for

(1) halibut with longline gear may not land or have on board lingcod in excess of five percent, by round weight, of all halibut on board the vessel;

(2) sablefish may not land or have on board lingcod, except as specified in (3) of this subsection;

(3) halibut and sablefish at the same time may not land or have on board lingcod in excess of five percent, by round weight, of all halibut on board the vessel.

5 AAC 28.190. HARVEST OF BAIT BY COMMERCIAL PERMIT HOLDERS IN EASTERN GULF OF ALASKA AREA.

(1) except for sablefish, groundfish may be taken at any time; sablefish may not be taken for bait or used for bait;

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TABLES AND FIGURES

Table 1.–Development Overview of the Clarence Strait/Dixon Entrance Sablefish Fishery.

Year	Development
1867	U.S. purchase of Alaska.
1871	U.S. Commission of Fish and Fisheries established.
1903	U.S. Bureau of Fisheries established.
1906	Act for the Preservation and Regulation of the Fisheries of Alaska is adopted.
Pre-1913	All landings of sablefish incidental to the halibut fishery.
1917	Earliest recorded sablefish landings by U.S. fleet from the "Ketchikan area"
1920's (late)	Canadian longline fishery reports landings off Southeastern Alaska.
1933	Earliest recorded sablefish landings by the U.S. fleet from the area specifically identified as Dixon Entrance.
1935	Clarence Strait/Dixon Entrance fishery becomes a regular feature of annual report.
1945	Season regulations imposed on all sablefish districts; closed period of 2.5 months from December 1– March 15.
1945	Dixon Entrance managed as part of a larger outside district (Area 150) and subject to a set annual season. Landings from Area 150 and southern inside area are not clearly differentiated in reports.
1947	Season closure for all sablefish districts extended; closed from December 1– May 1.
1948	Modified halibut gear first used in Chatham Strait to effectively target sablefish.
1959	Fishery regulations in place at time of statehood are continued by the Alaska Board of Fisheries.
1966	U.S. 3-mile territorial limit expanded to a 12-mile fishery zone.
1967	Sablefish allowed as incidental catch in longline and trawl fisheries for other species up to 10% by weight of each landing.
1968	Japanese longline fishery off Southeastern Alaska lands over 6349 metric tons.
1960's (late)	Southeastern Alaska separated into 16 management districts from south to north. The southern inside area includes districts 1– 8 excluding district 4. (A-B Line marks southern boundary).
1969	Canadian longline fishery in Southeastern Alaska in decline.
1970	Pot gear for sablefish first allowed.
1972	Southern inside area open for sablefish from April 1–December 30.
1972	Sablefish incidental catch in longline and trawl fisheries for other species increased up to 20% by weight of each landing.
1972	Japanese longline harvest off Southeastern Alaska peaks at 9301 metric tons and then begins decline.
1973–1975	Sablefish landings increase dramatically in Clarence Strait/Dixon Entrance.
1976	Southern inside area open for sablefish from June 15 to November 15.
1976	April 13, Magnuson Fisheries Conservation and Management Act signed; the 200-mile fisheries conservation zone is established off Alaska's coast.
1977	March 1, Magnuson Fisheries Conservation and Management Act takes effect.
1977	All outside waters, including Area 150, open to year-round fishing to encourage U.S. fishermen to harvest sablefish off Alaska's coast in competition with foreign effort.
1978	Voluntary agreement by Japanese North Pacific Longline-Gillnet Association to withdraw from the area east of Yakutat Bay.
1978	Incidental bycatch of sablefish abolished. Sablefish becomes prohibited species in U.S. fisheries for other species.
1980	Guideline harvest range of 125,000 to 500,000 dressed pounds established for the southern inside waters using average annual harvest over previous 10 years as guideline.
1981	Sablefish landings from the southern inside waters tallied separately from Area 150.
1982	Dixon Entrance District first closed by State of Alaska on August 2 to prevent over harvest of the quota. Southern Southeast inside waters first closed by emergency order on September 30.
1983	State of Alaska formally recognizes the Dixon Entrance District. The district includes all waters of the U.S. fishery conservation zone east of the longitude of Cape Muzon (132˚40' W. long.)and south of the southern boundaries of districts 1, 2, and 3.
1984	Reports for SSEI sablefish landings include the newly incorporated Dixon Entrance District.
1985	Groundfish adopts current 6 digit statistical area codes; previously used 5 digit salmon area codes.

Table 2. –Management Overview for the SSEI Sablefish Fishery

1980	A guideline harvest range was established at 125,000 to 500,00 dressed pounds.
1984	Season limitations were placed on the fishery, from 112 days to 48 days.
1985	Season limitations were placed on the fishery, from 48 days to 7 days. Fishery went limited entry.
1987	Season limitations were placed on the fishery, from 7 days to 5 days.
1990	Season limitations were placed on the fishery, from 5 days to 3 days.
1991	Season limitations were placed on the fishery, from 3 days to 2.4 days.
1994	A guideline harvest range was set at 250,000 to 500,000 dressed pounds.
1995	Season limitations were placed on the fishery, from 2.4 days to 2 days.
1997	A guideline harvest range was set at 400,000 to 790,000 round pounds. A shared quota system was implemented. Registration requirement became mandatory. Pot gear permit holders re-enter the fishery. Longline and pot season split, summer and fall respectively. Longline season was extended to 1.5 months. Pot season was set at 2.5 months.
1998	The annual harvest objective was set at 632,000 round pounds.
1999	The annual harvest objective was set at 696,000 round pounds.
2000	Longline season was extended to 2.5 months. Full retention of all *Sebastes* rockfish (not including thornyheads) takes effect July 5.
2003	Prohibited to catch and use sablefish for bait from the NSEI and SSEI Subdistricts. A 5% sablefish overage/underage could be carried over to the following season. Overage could also be transferred from one permit holder to another. Sablefish may be taken outside of established seasons in order to provide information on stock conditions or other research questions. Bycatch of shortraker rockfish, rougheye rockfish and thornyhead in excess of bycatch limits can no longer be placed on a CFEC M-card.

Table 3. –SSEI Sablefish Longline Fishery Opening Dates, Fishing Periods and Landings.

Management Subdistrict	Year	Opening Date	Closing date	Landings
SSEI	1985	6/15	6/22	Unknown
SSEI	1986	6/15	6/22	32
SSEI	1987	6/18	6/23	28
SSEI	1988	6/5	6/10	33
SSEI	1989	6/22	6/27	41
SSEI	1990	6/15	6/18	31
SSEI	1991	6/21	6/23	30
SSEI	1992	6/23	6/25	32
SSEI	1993	6/25	6/27	28
SSEI	1994	6/15	6/17	31
SSEI	1995	6/20	6/22	29
SSEI	1996	6/8	6/10	28
SSEI	1997	6/15	7/30	70
SSEI	1998	6/1	7/15	65
SSEI	1999	6/1	7/15	58
SSEI	2000	6/1	8/15	63
SSEI	2001	6/1	8/15	74
SSEI	2002	6/1	8/15	67
SSEI	2003	6/1	8/15	64
SSEI	2004	6/1	8/15	62

Table 4. –SSEI Sablefish Pot Fishery Opening Dates, Fishing Periods and Landings.

Management Subdistrict	Year	Opening Date	Closing date	Landings
SSEI	1985	6/15	6/22	0
SSEI	1986	6/15	6/22	Confidential
SSEI	1987	6/18	6/23	Confidential
SSEI	1988	6/5	6/10	Confidential
SSEI	1989	6/22	6/27	Confidential
SSEI	1990	6/15	6/18	0
SSEI	1991	6/21	6/23	Confidential
SSEI	1992	6/23	6/25	Confidential
SSEI	1993	6/25	6/27	0
SSEI	1994	6/15	6/17	0
SSEI	1995	6/20	6/22	0
SSEI	1996	6/8	6/10	0
SSEI	1997	9/1	11/15	26
SSEI	1998	9/1	11/15	13
SSEI	1999	9/1	11/15	12
SSEI	2000	9/1	11/15	22
SSEI	2001	9/1	11/15	18
SSEI	2002	9/1	11/15	15
SSEI	2003	9/1	11/15	11
SSEI	2004	9/1	11/15	11

Table 5. –History of Inseason Actions Affecting the SSEI State Managed Sablefish Fishery.

Species	EO #	Date Issued	Action	Date of NR
Sablefish	7	05/29/67	Allowed as bycatch for halibut not >10%	
Sablefish	29	11/23/71	Extension of SSEI season. 5/15-12/15	
Sablefish	1-M-01-77	02/07/77	Opens districts 4 and 16 and sections of 13-A and 13-B on 02/08 for a year round season	
Sablefish	1-M-8-82	07/23/82	Closes districts 4 and sections 13-A and 13-B on 08/02	
Sablefish	1-M-10-82	09/14/82	Announced 09/30 closure of SSEI inside area	
Sablefish	1-M-10-83	10/05/83	Reopened Northern area, announces closure of Southern area on 10/14	
Sablefish	I-M-10-85	6/14/85	Opens SSEI and Dixon Entrance on 6/15	
Sablefish	I-M-11-85	6/19/85	Closes SSEI and Dixon Entrance on 6/22	
Sablefish	I-M-5-86	4/14/86	Closes district 4,16,13,13-A, 13-B, Dixon Entrance 4/17	
Sablefish	I-M-8-86	6/19/86	Closes the SSEI 6/22	
Sablefish	I-M- 8-87	4/8/87	Closes districts 4 &16, sections 13-A and 13-B, and Dixon Entrance on 4/9	
Sablefish	I-M-11-87	6/1/87	Season for SSEI, including districts 1,2,3,4,5,6,7 and 8 and Dixon Entrance from 6/18 to 6/23	
Sablefish	I-M-6-88	4/29/88	Closes the SE/EYKT and WYKT areas (including dist. 4 &16, section 13-A, 13-B), Dixon Entrance west of C. Muzon, & all state waters of Yakutat on 5/2	
Sablefish	I-M-10-88	6/1/88	Sets season for SSEI from 6/5 to 6/10	
Sablefish	I-M-13-89	5/10/89	Opens the SSEI from 6/22 to 6/27	
Sablefish	I-M-05-90	6/15/90	Opens the SSEI 6/15 to 6/18	
Sablefish	I-M-15-91	6/13/91	Opens the SSEI 6/21 to 6/23	
Sablefish	I-M-09-94	6/13/94	Opens the SSEI 6/15 to 6/17	6/1/94
Sablefish	I-G-11-96	6/6/96	Opens the directed season for sablefish in SSEI on 6/8 for 48 hrs.	5/21/96
Sablefish	I-G-14-96	9/4/96	Opens the season for bycatch allowances for SSEI and NSEI.	9/4/96
Sablefish	I-G-7-97	6/15/97	Opens and closes the directed season for longline gear in SSEI 6/15 to 7/30	5/21/97
Sablefish Bycatch	1-G-11-98	08/25/98	Opened bycatch allowances for state managed sablefish fisheries. 8/25 to 12/31	8/25/98

Table 6. –The SSEI Sablefish Fisheries Annual Harvest Objective, Equal Quota Share, Reported Harvest, Value and Effort for 1985 through 2004.

			Longline Fishery					Pot Fishery			
Year	Annual Harvest Objective Rnd. Lbs.	Equal Share Quota	Round lbs Reported	Exvessel Value	No. of Permits Fished	CPUE (Rnd. Lbs./ Hook)	No. of Days	Round lbs Reported	Exvessel Value	No. of Permits Fished	No. of Days
1985	790,000	NA	511,617	$322,319	43	0.232	7				
1986	790,000	NA	554,121	$260,436	22	0.280	7	Confidential	Confidential	2	7
1987	790,000	NA	435,501	$291,785	22	0.185	5	Confidential	Confidential	1	5
1988	790,000	NA	712,787	$719,914	26	0.228	5	Confidential	Confidential	1	5
1989	790,000	NA	952,231	$714,173	31	0.242	5	Confidential	Confidential	1	5
1990	790,000	NA	758,663	$553,823	29	0.248	3	0	0	0	3
1991	790,000	NA	679,623	$625,253	30	0.211	2.4	Confidential	Confidential	1	2.4
1992	790,000	NA	936,811	$936,811	29	0.269	2.4	Confidential	Confidential	1	2.4
1993	790,000	NA	824,011	$815,770	27	0.219	2.4	0	0	0	2.4
1994	790,000	NA	866,788	$1,066,149	30	0.210	2.4	0	0	0	2.4
1995	790,000	NA	678,762	$1,323,585	28	0.227	2	0	0	0	2.4
1996	790,000	NA	502,459	$899,401	28	0.171	2	0	0	0	2.4
1997	790,000	23,200	608,789	$1,345,423	29	0.360	45	116,281	$256,981	5	76
1998	632,000	20,400	496,210	$699,656	27	0.366	45	81,846	$113,765	4	76
1999	720,000 [a]	24,000	565,190	$1,006,038	25	0.435	45	96,234	$193,430	4	76
2000	696,000	24,000	494,133	$988,804	24	0.379	76	96,287	$187,760	4	76
2001	696,000	24,000	554,247	$1,064,154	24	0.310	76	96,188	$184,679	4	76
2002	696,000	24,000	554,074	$1,074,904	24	0.413	76	92,265	$203,983	4	76
2003	696,000	24,860	557,496	$1,251,741	23	0.435	76	99,834	$216,521	4	76
2004	696,000	24,860	550,472	$871,689	23	0.397	76	98,373	$158,986	4	76

Note: Table 6 includes only data from the directed fishery and does not include fish taken during the test fish fishery, illegally as bycatch in other fisheries, or reported used as bait.

[a] Due to a CFEC error in calculating the total number of eligible permits, the AHO was increased to maintain an equal quota share of 24,000 round lbs. for all permits.

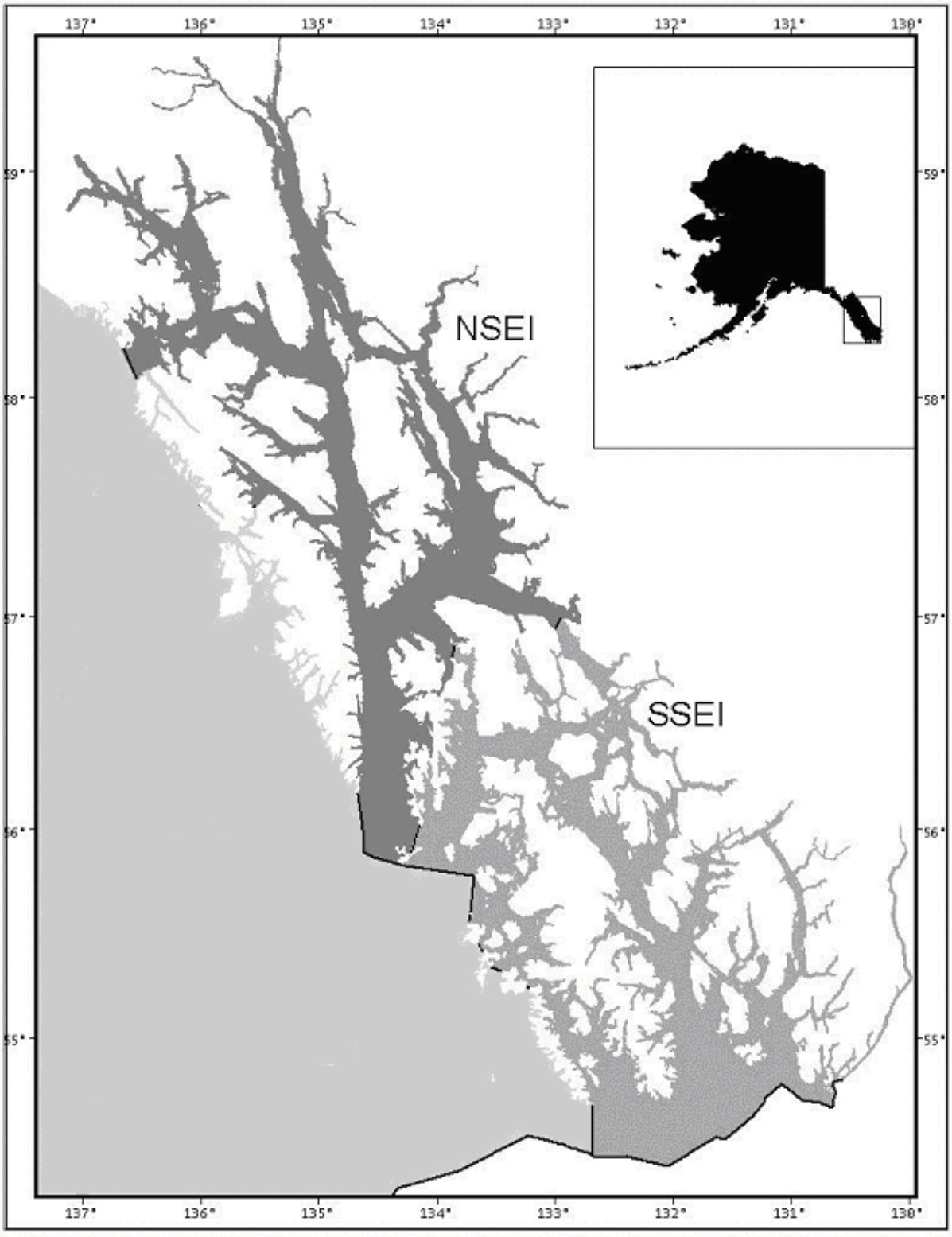

Figure 1. –Management Subdistricts for the State Sablefish Fisheries in Southeast Alaska.

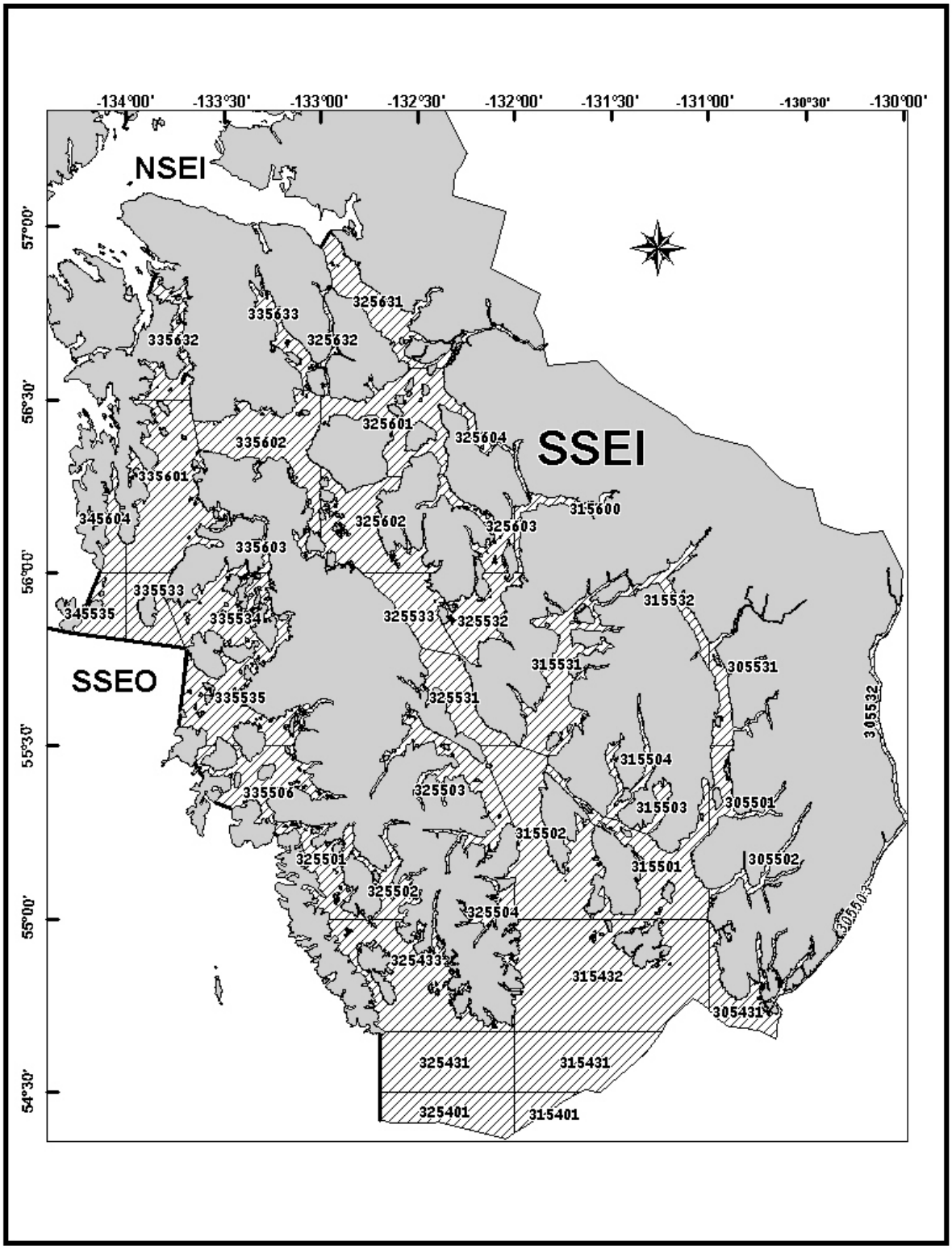

Figure 2. –The SSEI Subdistrict with Groundfish Statistical Areas.

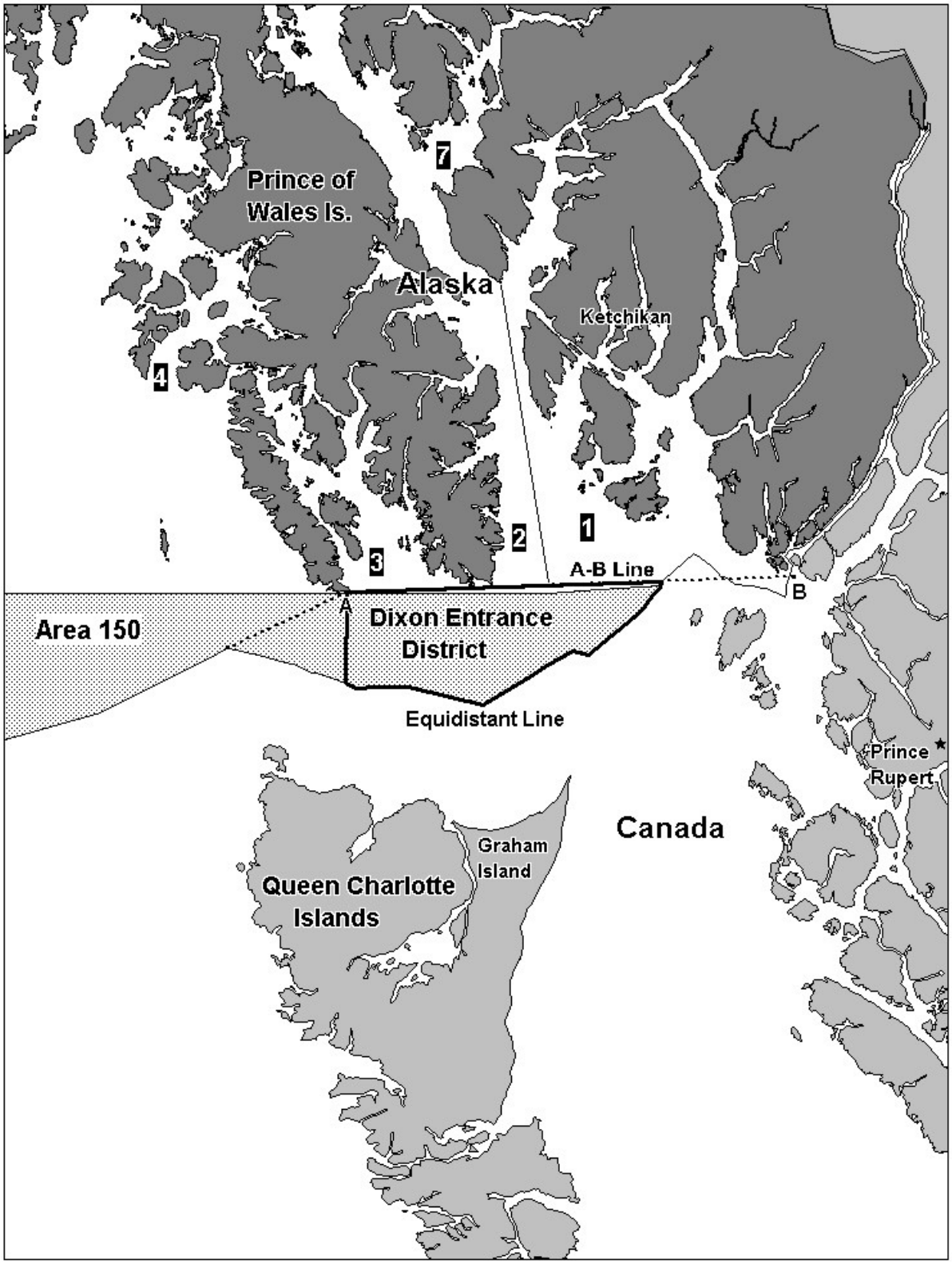

Figure 3. –Area 150 and the Dixon Entrance District.

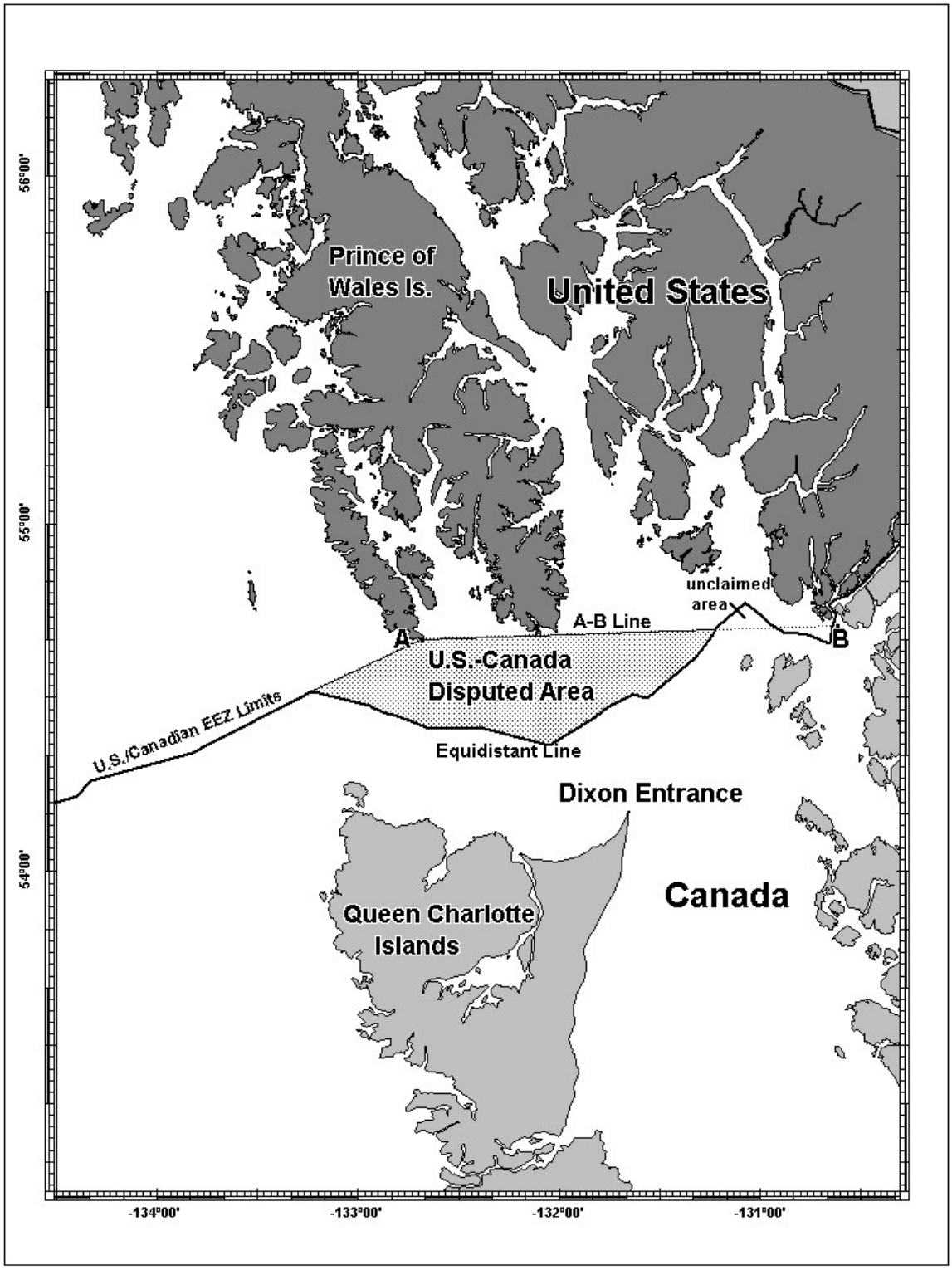

Figure 4. –The A-B Line, the Equidistant Line and the U.S.-Canada Disputed Area in Dixon Entrance.

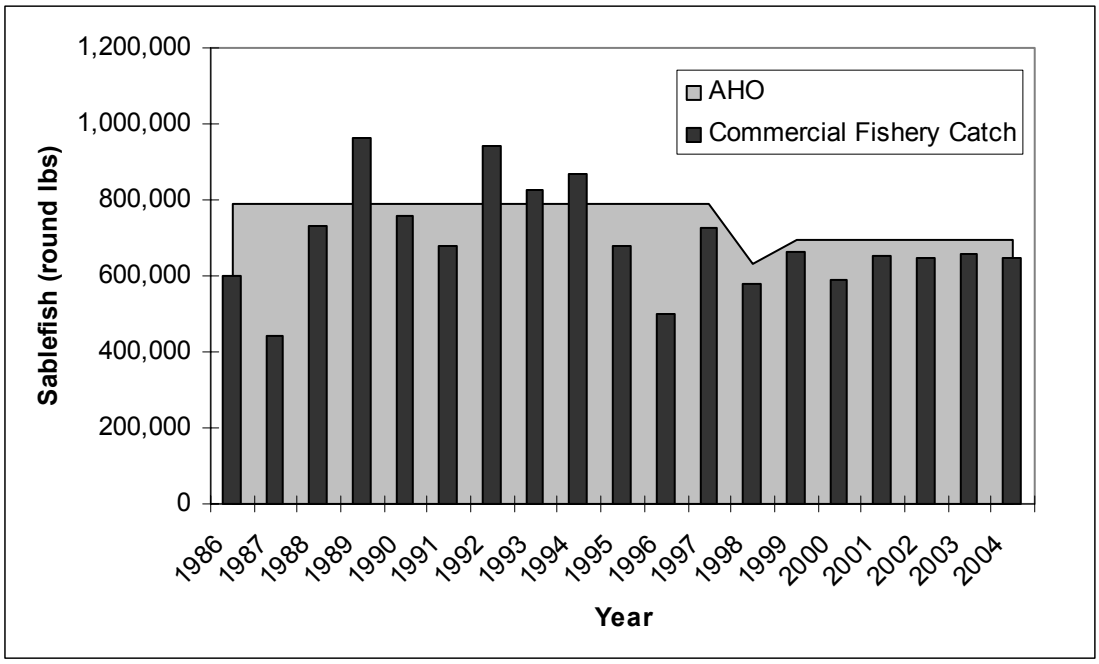

Figure 5. –Annual Harvest Objective vs Commercial Catch in the SSEI Sablefish Fishery from 1988 to 2004.

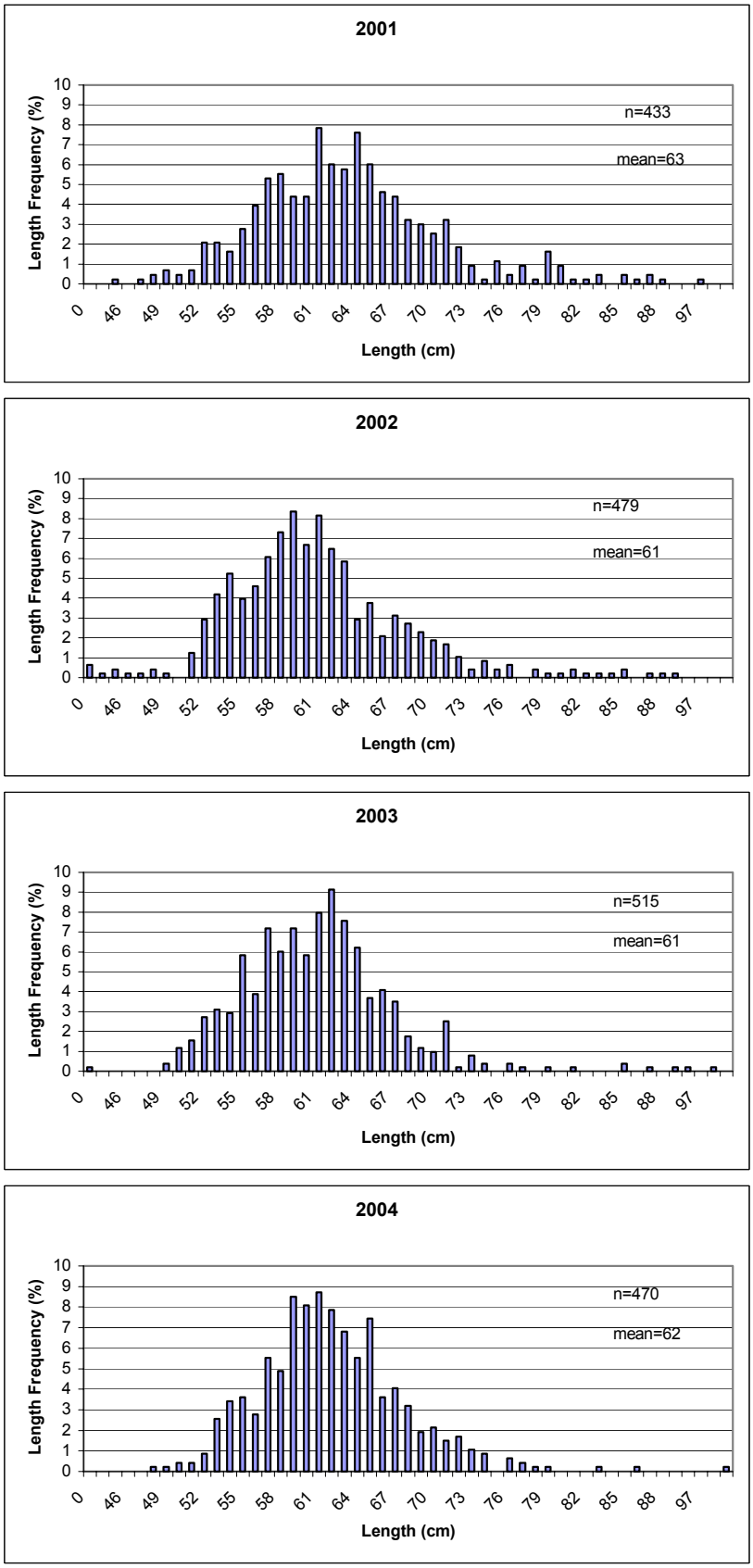

Figure 6. –Length Frequency Distribution for Sablefish in the SSEI Longline Fishery.

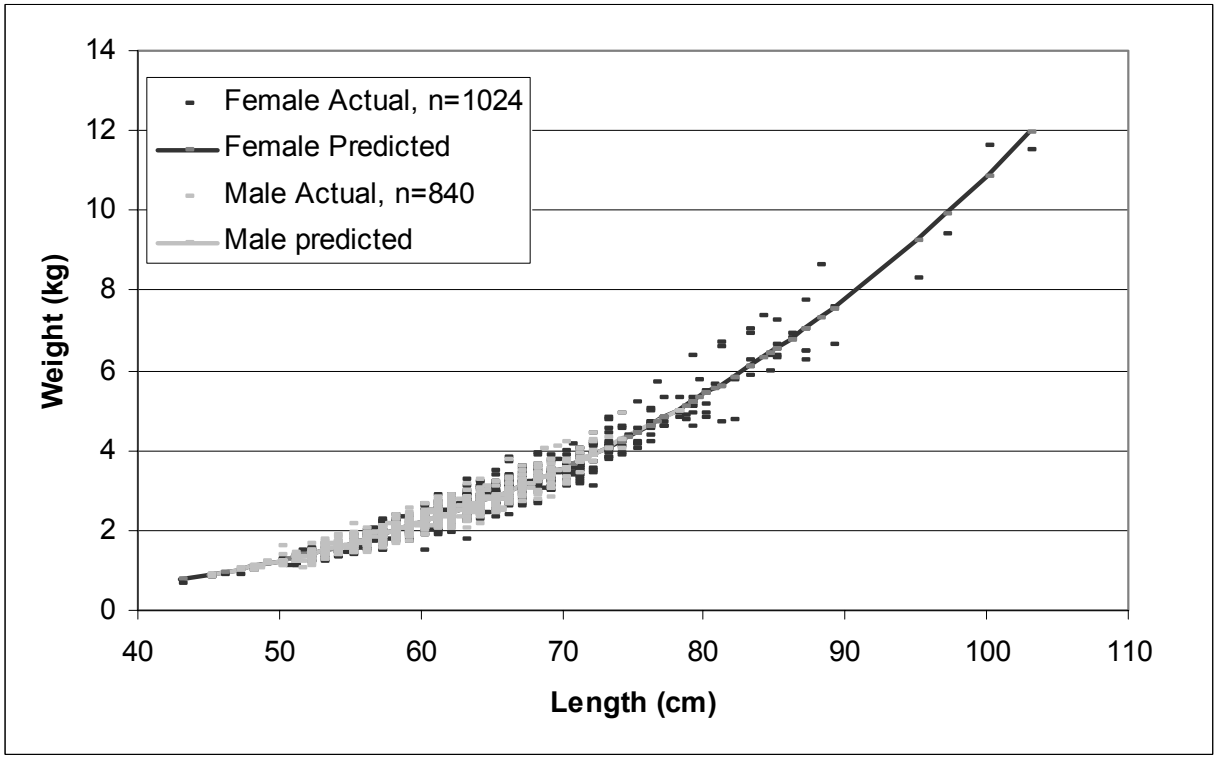

Figure 7.–Length, Weight Regression for Sablefish sampled from the Commercial SSEI Longline fishery (2001–2004).

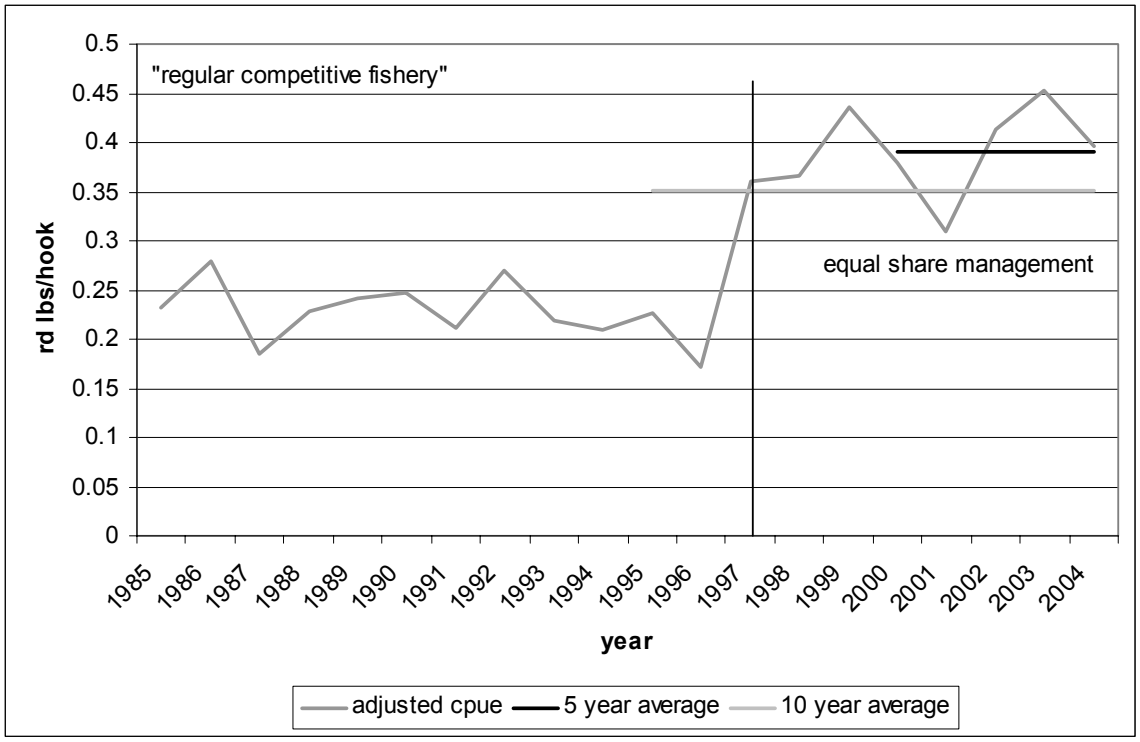

Figure 8. –SSEI Commercial Longline Catch Per Unit Effort, Round Pounds Per Hook.

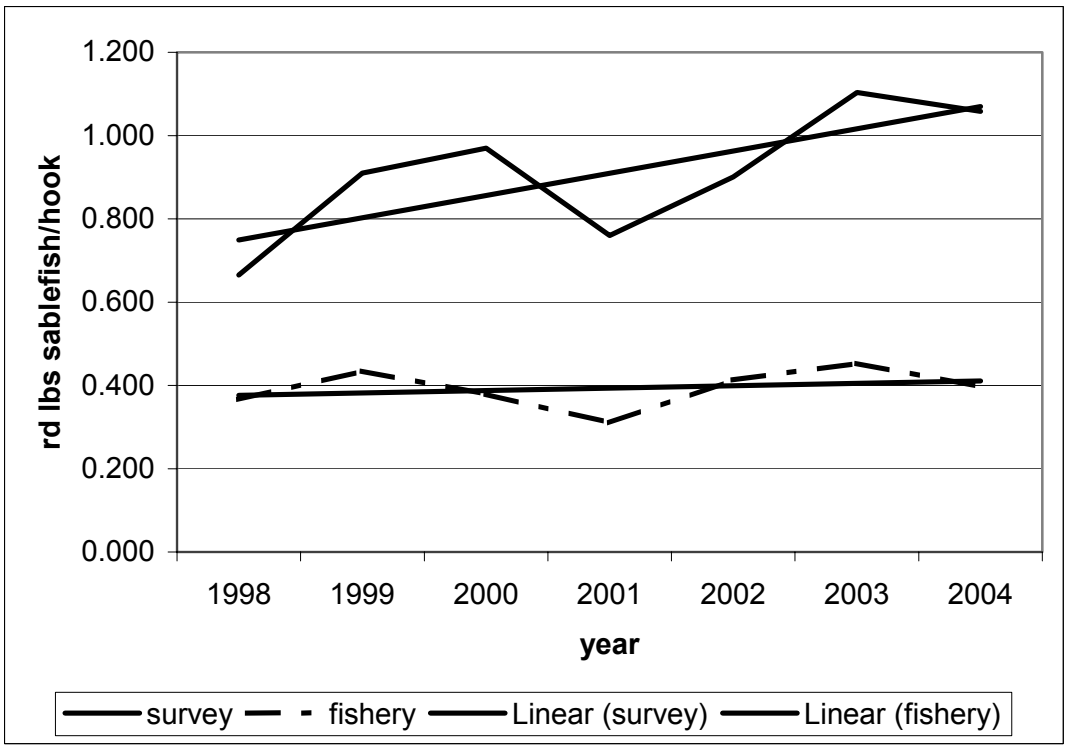

Figure 9. –SSEI Longline Survey and Commercial Fishery Catch Per Unit Effort**,** Round Pounds Per Hook (1998-2004).

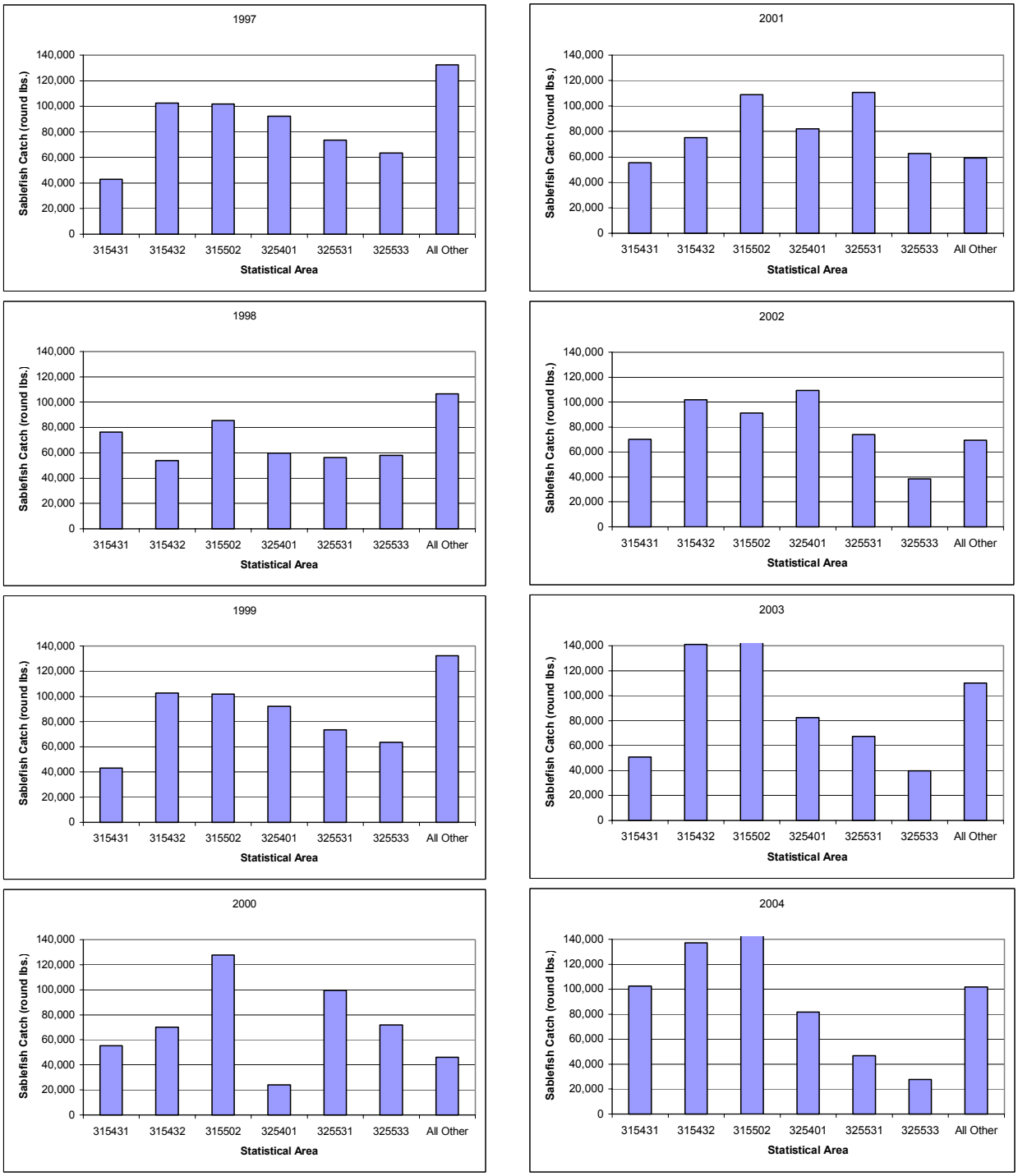

Figure 10. –Changes in Fishery Distribution, in Round Weight, by Statistical Area and Year.

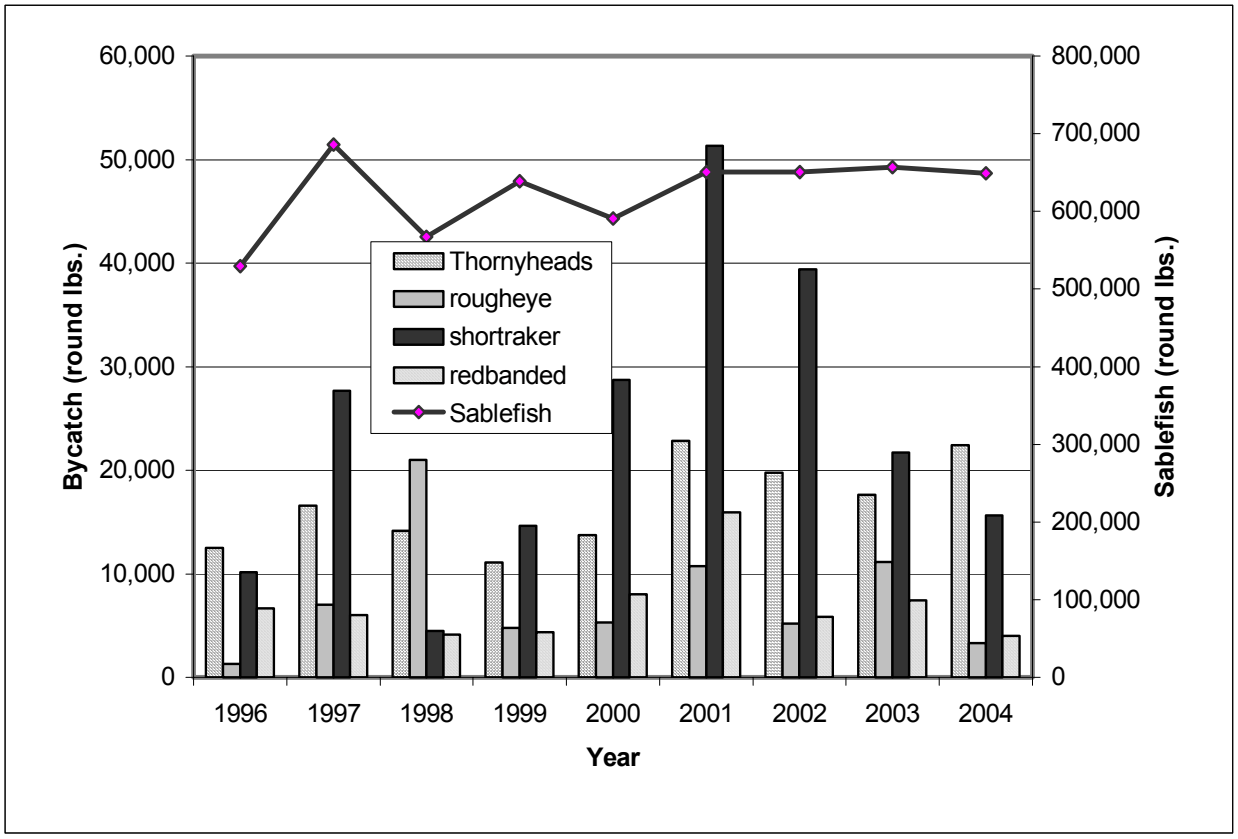

Figure 11. –Bycatch Landed in the SSEI Sablefish Fishery from 1996–2004.

APPENDIX A

Appendix A1. –Listing of ADF&G Region I Commercial Fisheries Groundfish Personnel.

Scott Kelley, Regional Supervisor Kyle Hebert, Regional Research Supervisor Deidra Holum, Fishery Technician IV	Douglas Office 802 3rd Street Douglas, AK 99824 (907) 465-4250
Tory O'Connell, Groundfish Project Leader Cleo Brylinsky, Fishery Biologist II Eric Coonradt, Fishery Biologist II Mike Vaughn, Fishery Biologist I Kamala Carroll, Fishery Technician III Bill Davidson, Acting Regional Management Supervisor	Sitka 304 Lake Street, Room 103 Sitka, AK 99835 (907) 747-6688

For commercial permits and vessel license applications contact:	State of Alaska **Commercial Fisheries Entry Commission** (907) 789-6150 **National Marine Fisheries Service**, Alaska Regional Office (907) 586-7229 **Restricted Access Management** program (RAM), P.O. Box 21668, Juneau, AK 99802-1668, (907)-586-7202

Appendix A2.–ADF&G Longline-Pot Fishery Logbook form.

ADF&G LONGLINE - POT FISHERY LOGBOOK

PERMIT HOLDER ____________ TARGET SPECIES ____________ CREW SIZE (includes skipper) ____

VESSEL NAME ____________ PORT OF LANDING ____________

ADF&G NUMBER ____________ DATE LEFT PORT ____________

SKIPPER NAME ____________ DATE OF LANDING ____________

SYSTEM USED: CONV ☐ SNAP ☐ OTHER (explain) ____

LONGLINE GEAR			
HOOK SIZE/TYPE	SKATE LINE SIZE	HOOK SPACING	NUMBER OF HOOKS/SKATE
/			

POT GEAR		
POT DIMENSIONS (ft)	GROUNDLINE WT. OR DIAMETER	POT SPACING (ft)

BAIT(S) USED	%

SET NO.	DATE SET	TIME SET	Lat X Lon Beginning	DATE HAULED	TIME HAULED	Lat X Lon End	AVERAGE DEPTH (fm)	NO. SKATES OR POTS SET	LOST GEAR Y/N - (HOW MUCH?)	COMMENTS/TAGS ATTATCH TAGS HERE FOR THIS SET

CATCH DATA please indicate if catch is in NUMBERS or POUNDS (round) use separate box for each species	TARGET	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT

SET NO.	DATE SET	TIME SET	Lat X Lon Beginning	DATE HAULED	TIME HAULED	Lat X Lon End	AVERAGE DEPTH (fm)	NO. SKATES OR POTS SET	LOST GEAR Y/N - (HOW MUCH?)	COMMENTS/TAGS ATTATCH TAGS HERE FOR THIS SET

CATCH DATA please indicate if catch is in NUMBERS or POUNDS (round) use separate box for each species	TARGET	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT

SET NO.	DATE SET	TIME SET	Lat X Lon Beginning	DATE HAULED	TIME HAULED	Lat X Lon End	AVERAGE DEPTH (fm)	NO. SKATES OR POTS SET	LOST GEAR Y/N - (HOW MUCH?)	COMMENTS/TAGS ATTATCH TAGS HERE FOR THIS SET

CATCH DATA please indicate if catch is in NUMBERS or POUNDS (round) use separate box for each species	TARGET	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT	SPECIES	AMOUNT

ADDITIONAL COMMENTS / Did you shake gear and/or sablefish due to reaching your limit? How much?